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ABSTRACT

A 2-year study of cost-benefits in special education undertook activities in five years: development of a cost analysis framework, cost data collection, outcome data collection, development of benefit-cost analysis procedures, and benefit-cost analysis application. A generic school-based model was developed in which costs could more accurately be described for local district planning, budgeting and allocating of resources to instructional program and service areas. The cost analysis framework was used to collect cost data from a large suburban school district to show the feasibility of the model in special education. A follow-up study on school records and outcome information revealed that there were clear differences at the conclusion of school among those students identified as special education, vocational education and college bound. A concept paper was developed to present the analytical process of a benefit-cost study for special education. Finally, a benefit-cost analysis conducted to assess a specific public school special education program serving mentally retarded students indicated that projected lifetime earnings of mildly retarded adults clearly exceeded the costs of providing special education for this population. (CL)

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FINAL REPORT
Grant Number: G008400605

Benefit-Cost Evaluation of Local Special Education Programs

Department of Educational Psychology

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Project Directors

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ABSTRACT

From June 1984 through October 1986, the Office of Special Education and Rehabilitative Services, U.S. Department of Education, funded a grant for a project entitled "Benefit-Cost Evaluation of Local Special Education Programs." This project had five primary components: (1) the development of a framework for analyzing costs, (2) the collection of cost data for a sample of special education students, (3) the collection of outcome data from a sample of special education students, (4) the development of a procedure for analyzing the relationship between costs and benefits, and (5) the application of the benefit-cost methodology to a local special education program. Extensive developmental, data collection, and analysis activities were completed as part of the "Benefit-Cost Project." This report provides the following summary information about the project: (a) objectives, (b) personnel, (c) major activities and findings, and (d) products from project activities.

INTRODUCTION

The Benefit-Cost Project was funded in 1984 to conduct a benefit-cost evaluation of the effectiveness and efficiency of special education services for handicapped students. This purpose reflected the growing concern in education in general, and special education in particular, with the need to be able to document the relationships between costs and long-term benefits of education. Especially of interest are benefits that accrue within a broader social context, including those received by the student (e.g., economic self-sufficiency, personal adjustment, community involvement) and those derived by society (e.g., decreased use of public assistance programs, reduced incidence of institutionalization, increased tax collections).

Benefit-cost analysis is an economic accounting procedure that involves weighing and quantifying in monetary terms both the costs and the benefits of a particular program, and deriving an estimate of the program's efficiency. In some cases, when it is impossible to assign monetary values to the primary benefits, cost-effectiveness analyses are used. In these cases, the costs of achieving key common (but non-monetized) outcomes are identified and compared across programs to assess relative efficiency. The primary issue addressed by benefit-cost and cost-effectiveness analyses is whether the various outcomes of a program justify their costs in terms of economic efficiency. Specifically, does society have more goods and services at its disposal as a result of funding the program (or program form) than if the program resources had been used in alternative ways or for alternative purposes? This is a crucial question for special education programs.

There have been only a few rudimentary attempts to evaluate the benefits and costs of special education programs provided in public school settings in the U.S. In 1979, Brewer and Kakalik concluded that "reliable analyses of the cost and effectiveness of special educational services require information that is not presently available" (p. 396).

However, they attempted to show what a possible analysis might look like by examining the costs of special education and then estimating how much the handicapped person would have to earn, after leaving school, to equal the extra expenditures for special education, and then discussing whether this seemed plausible. With the assumption that a child receives special education services at an excess cost of $800 per year for 12 years, they indicate that the person will have to earn about $108 per month more after receiving special education services, working until age 55, to justify the program (taking only economic benefits into consideration). They suggest that it is not unlikely that 12 years of special education would produce this small amount (63 cents per hour) of increased earnings. This hypothetical analysis does not even consider other important benefits that might be derived from special education services (increased personal adjustment, decreased use of public assistance, etc.). It is an economic analysis based solely on monetary benefits, and as Brewer and Kakalik note, there does not even exist the necessary data on economic benefits to prove their hypothetical analysis.

Others have attempted similar economic benefit-cost analyses of special vocational education for mildly retarded individuals (Conley, 1969; 1973) and of industries for severely handicapped individuals (Cho & Schuermann, 1980). Benefit-cost analyses in the area of vocational rehabilitation and education serve as models of the type of analyses needed to evaluate special education programs. Although many studies have not directly examined the relationship between benefits and costs (cf. Flynn, 1982), some have done so. For example, analyses have examined benefits and costs for alternative employment training of mentally retarded persons (Schneider, Rusch, Henderson, & Geske), and as a function of severity of handicap in relation to wages earned (Walls, Tseng, & Zarin, 1976) and taxpayer savings (Hill & Wehman, 1983), and a number of other factors (Thornton, 1985). Still, these models have been of limited value for the evaluation of

local special education programs because they require expensive, time-consuming evaluations with elaborate time-serial data.

On the other hands limited number of school districts have begun to collect the types of benefit and cost data that could be submitted to benefit-cost and cost-effectiveness analyses. One such school district in Minnesota was identified. A data base of school record and follow-up information on students since 1977 was developed, and relevant cost data were collected, as part of the funded research project. The project took advantage of the refinements of benefit-cost methodology and the availability of a good data base to produce benefit and cost data on special education services.

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RESEARCH OBJECTIVES

Five specific research objectives were addressed by the Benefit-Cost Evaluation project. The objectives were:

Objective 1: To produce research findings on the benefits and costs of various special education services for handicapped children and youth.

Objective 2: To identify the types of data needed to conduct good benefit-cost analyses in schools.

Objective 3: To examine alternative ways to modify benefit-cost analysis techniques so that they are most applicable to local school settings.

Objective 4: To field test modified benefit-cost analysis procedures in special education programs for mildly handicapped students.

Objective 5: To develop a case study against which local special education administrators can compare their programs to judge the feasibility of such an approach for conducting their own effectiveness and efficiency evaluations.

The timeline for these activities was revised to conform to a two-year project period rather than the three-year period originally proposed. With this revised timeline, the research objectives were focused toward the completion of five major activity components. The five component areas were:

- Cost Analysis Framework
- Cost Data Collection
- Outcome Data Collection
- Benefit-Cost Analysis Procedure
- Benefit-Cost Analysis Application

PERSONNEL

The Benefit-Cost Project was directed by Robert H. Bruininks and Darrell R. Lewis. Dr. Bruininks is Professor of Educational Psychology, Director of the Center of Residential and Community Services, and Director of the Minnesota University Affiliated Program on Developmental Disabilities. Dr. Bruininks has extensive experience in research, evaluation, and administration related to educational and human service programs. For two years he served as director of the Minnesota Developmental Disabilities Office.

Dr. Bruininks has directed extensive national research studies on residential services for developmentally disabled people which have provided important information to many federal agencies, including the Department of Education, the Office of Planning and Development, and ADD in OHDS. Dr. Bruininks collaborated with Mathematica Policy Research in a national experimental benefit-cost evaluation of employment training for mentally retarded adults. He has directed many large scale survey research and evaluation studies and published extensively on special education and human services issues. Dr. Bruininks had primary responsibility for coordinating project activities in the Benefit-Cost project.

Dr. Darrell Lewis is Professor of Educational Administration and Policy Studies at the University of Minnesota. Trained as an economist, Dr. Lewis is well versed in cost analyses and in benefit-cost and cost-effectiveness research. He has conducted research and published extensively on economic issues in higher education and employee productivity. He consults regularly with universities, foundations and government agencies on economic and educational policy issues in the United States and other countries. Dr. Lewis had primary responsibility for the cost framework and application of the benefit-cost methodology in the Benefit-Cost project.

Special consultation to the project on benefit-cost analysis procedures was provided by Dr. Craig Thornton and others at Mathematica Policy Research, a subcontractor on the Benefit-Cost project. Dr. Craig Thornton is a senior economist at Mathematica Policy Research (MPR), a company with considerable experience in the design and application of benefit-cost techniques for social program evaluation. MPR developed and applied comprehensive benefit-cost methods for evaluating such programs as the National Supported Work Demonstration, Job Corps, transitional aid programs for released offenders, apprenticeship, and the STETS demonstration for mentally retarded youth. Dr. Thornton has had a senior research role in virtually all of MPR's benefit-cost studies, including the design and interpretation of the accounting framework, and has produced many publications. He has had research experience with numerous populations, including elderly, mentally retarded, and welfare populations.

Management of day-to-day project activities was the responsibility of the project's Field Director, Martha Thurlow. She has over 14 years of research experience, with strong emphasis on evaluation-related issues in special education. She has served as research coordinator and study site liaison on major long-term research projects and has directed large-scale dissemination activities in two institutes devoted to research on handicapped children. She has published extensively and has served as consultant to several community educational programs.

The project's computer specialist was Bradley K. Hill. He has an educational background in both economics and educational psychology and is very experienced in computer technology and statistical analyses. He also has extensive experience in translating statistical results into practical information for both professionals and lay people. He has published extensive research on services for handicapped people. Mr. Hill assisted in technical aspects of the research throughout the project, with primary emphasis on data analysis.

A project steering committee provided advice on feasibility issues related to collecting follow-up information and input to development and analysis activities. The composition of the project changed somewhat over time, but included, in addition to staff members, key individuals in schools and state education agencies.

A variety of student personnel also worked on the project. These individuals were supported as Research Assistants, Graduate School Fellows, or Psychometric Assistants.

SUMMARY OF PROJECT ACTIVITIES

Benefit-Cost Project activities were completed in five component areas: (a) cost analysis framework, (b) cost data collection, (c) outcome data collection, (d) benefit-cost analysis procedures, and (e) benefit-cost analysis application. These activities, including background information, procedures, and conclusions are summarized here.

Cost Analysis Framework

Background

Questions concerning costs in special education have been raised at federal, state, and local levels. Such costs and resource use have been increasing in both absolute terms and relative to regular instruction. Much of this increase is attributable to recent federal and state legislation (and appropriations) along with society's expressed political and social priority for issues of equity and educational opportunities for children with handicapping conditions. Nevertheless, this sector of the budget is coming increasingly under administrative and budgetary scrutiny. The issues have not focused so much on the "need" for special education, but rather on whether we are "getting our money's worth" and "where the money is going?" Greater expenditure accountability and questions of cost-effectiveness are at issue at all levels in education.

Recent efforts to address these expenditure issues in special education have even been mandated by Congress wherein studies have been commissioned to survey nationally representative data on special education expenditures for comparative purposes. However, little systematic attention has been given to assisting local school districts in their planning, budgeting and allocating of resources for special education.

With the questions increasingly being focused on issues of accountability, cost containment and program efficiency, it is clear that the primary focus of control for these matters lies within the local districts. District policy makers and administrators need reliable and complete cost information for assessing, initiating or replicating an educational program or service. They also need to know incremental (marginal) costs in order to make decisions about program and service area expansions and contractions. They need to know what it costs to provide a particular service or program for different students with differing needs. In short, while the programmatic management responsibilities and data are primarily at the district level, there has been little attention given to providing districts with the methods and benchmarks needed for making such decisions.

Procedures

The goals of this activity component were to develop a generic school-based model wherein costs can be described more fully and accurately for local district planning, budgeting and allocating of resources to instructional program and service areas, and to adapt this model to the specific programmatic needs of special education.

The developed cost analysis technique is a resource components approach to costing out educational programs. This approach requires the listing of a comprehensive set of educational programs within a district, or a comprehensive set of service areas within a program; the determination and measurement of the specific resources that are employed within each of these programs or service areas; and the valuing of these resources to

determine program or service area costs. On the basis of these standardized cost data and the number of pupils or instructional hours of service that the school district enrolls or provides per pupil in each program or service area, the overall cost of education can be determined along with the various per pupil unit costs.

Basic issues addressed in the cost analysis framework revolved around three general concerns: What are the resources employed and the costs of these resources in the delivery of local school district special education programs and services? Who bears the burden of these costs? And, what are the factors which explain variations in these costs? In the context of these three general concerns, the project focused the cost model on the following specific questions: (1) What is the average per pupil expenditure (per year, per day, and per student hour of instruction) for each of the special education programs and service areas (grouped by age and grade levels) currently being provided to handicapped children? (2) What is the average per pupil expenditure for regular instruction currently being provided for handicapped children? (3) What is the average per pupil expenditure (per year, per day, and per student hour of instruction) for each of the special education programs and service areas currently being provided to handicapped children by public and private agencies external to the district? (4) What are the total costs to the district for special education and for each of its constituent programs and service areas? (5) What are the total costs to society for special education in this district and for each of its constituent programs and service areas? (6) What are the relationships of costs in special education to those in regular instruction? (7) Who bears the financial burden of special education? (8) What are the factors that explain variations in costs for each of the special education programs and service areas?

Conclusions

Few previous cost studies in special education have used an "ingredients" or "resource components" approach, nor have they focused on district level decision making.

Most other cost analysis approaches in special education simply take their data directly from school district budget records according to reimbursement or summary budget categories without regard to the actual allocations of resources employed or without regard to any imputed value for district or other social resources that might lie outside of the district cash budget. Moreover, analysis approaches dealing with special education costs have attempted to examine only the program costs of a handicapped condition or category without regard to multiple services for students with multiple conditions, to differences in services by grade levels, or to variations in actual student use of services within particular service areas. Additional details on the analysis approach used by the Benefit-Cost Project are provided in Project Report No. 1:

Benefit-Cost Analysis and Special Education Programs, by C. Thornton & J. Will.

The decade of the 1980s has produced considerable concern over the costs of services in special education. Discussion of cost issues, however, can never be considered independently from matters of values, appropriateness, and effectiveness. The issues involved in managing special education are often inherently complex. To reduce costs of transporting students, for example, a district might need to increase the transportation costs of itinerant teaching personnel as the student placements become more decentralized. Cost issues, moreover, often become secondary issues in relationship to policy directions or important social values. Our central thesis is not that cost data should direct policy decisions. Rather, it is being argued that such data can become a powerful tool in planning programs, evaluating services, and in considering alternative actions to increase the efficiency, appropriateness and effectiveness of services. These data become most useful in management and policy decisions when considered in the context of important values and concepts for providing special education services to students with disabilities.

Cost Data Collection

Background

Most Previous attempts to analyze special education costs have taken their data from school district budget records. They have done so by using existing reimbursement or summary budget categories without regard to the actual allocations of resources employed, and without regard to any imputed value for district or other social resources that might lie outside of the district cash budget. Further, studies of costs typically have examined only the program costs of a handicapping condition or category without regard to multiple services for students with multiple conditions, or they have examined costs without regard to differences in services by grade levels. Studies have ignored variations in actual student use of services within particular service areas.

The cost analysis framework developed by the project was used to collect cost data from a large suburban school district to show the feasibility and utility of the model in special education, and to obtain empirical data to use in benefit-cost analysis.

Procedures

Information and data on resources employed and their respective costs were collected through examination of school district budget and expenditure records, state and district reimbursement records, State Department of Education printed reports and guidelines, and discussions with key district personnel. Similarly, information and data on students and program service areas were collected through examination of special education program and student records and discussions with key district and program personnel. All data were from the 1983-84 fiscal period (the district school year) of a large Minnesota suburban school district.

Conclusions

Results from the application of the cost analysis procedures indicated that (1) any systematic examination of instructional costs in special education must allow for variations in student use of such services; (2) school district budgets in special education materially understate the real costs of special education to both the district and society; (3) representations of current State reimbursement rates and contributions to special education costs are materially overstated and misrepresent the real reimbursement rate to a local school district; (4) cost savings to a school district frequently are gained when special education services are received from external agencies; (5) some costs in the delivery of special education services are often over-estimated (e.g., teacher salaries) while other costs are often under-estimated (e.g., transportation, fringe benefits, and the use of facilities); and (6) unit costs for special education services in the 1980s appear to be less than those reported in earlier studies approximately 15 years ago. The detailed cost study results are reported in Project Report No. 2:

Cost Analysis for District Level Special Education Planning, Budgeting, and Administration, by D.R. Lewis, R.H. Bruininks, M.L. Thurlow, & C. Thornton.

Outcome Data Collection

Background

The extent to which handicapped individuals move from schooling toward employment and community integration has become a key concern of educators and policy makers in the past few years. This concern has been highlighted since the 1984 Amendments of the Education of the Handicapped Act (Public Law 98-199), which emphasized transitional services for handicapped youth. Much of the focus has been on individuals with more severe handicaps. The studies that have focused on individuals with mild handicaps frequently have focused mainly on employment outcomes.

The project's comprehensive follow-up study was conducted as one component of the larger study on the benefits and costs of special education. School record information and outcome information were collected for students who graduated or would have graduated from a special education program between the years 1977 and 1984. In addition, similar information was collected for samples of students in vocational and college programs in the same high schools in a suburban midwestern school district.

School record information was collected on 466 special education, 519 vocational, and 519 college students. Special education students for whom school record information was collected included 327 learning disabled, 75 educable mentally retarded, 35 speech impaired, 25 emotionally disturbed, and 4 visually impaired students. Outcome information was obtained from 311 special education (66%), 330 vocational (64%), and 368 college (71%) students using a mail survey form and some telephone interviews. Special education students in the respondent group included 220 learning disabled, 51 educable mentally retarded, 22 speech impaired, 14 emotionally disturbed, and 4 visually impaired.

Conclusions[1]

The school data and outcome analyses produced several findings that deserve further attention. Because of the large number of comparisons and the comprehensiveness of the data, this summary will highlight only the major findings.

At the time when students leave school, there are clear differences among those who have been identified as special education students, those who have followed a vocational program, and those identified as college bound. These differences are evident in school measures, such as grade point averages, class percentile ranks, and graduation rates. The differences also are evident in various indices of school participation (i.e., absenteeism) and use of auxiliary services, as well as in measures of cognitive ability and measures of achievement. The college students and special education students are at the extremes, with the vocational students somewhere in the middle. In all cases, each group was significantly different from the other two.

When special education students leave school, there are some consistent differences among those who have been placed in different service categories; the most obvious differences involve the ED category. Categorical differences in school measures (e.g., graduation rate, grade point averages, class percentile ranks), in school participation (i.e., absenteeism), and in services received consistently involve with emotional disorders, students who do more poorly on school measures, participate less in school, and receive more extensive services than other categories of students. They do not differ considerably from most other categories in terms of performance on aptitude and achievement measures.

The characteristics that most uniquely separate the special education categories during school years are the original reason for referral and the intensity of special

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[1]Samples of students are referenced by categorical designation (ED, MR, SP, etc.) simply for editorial convenience. Use of such terms is not intended to detract from the personal qualities of individuals in this study.

education services during high school. The original reason for referral generally is different for EMR students ("low ability") and SP ("oral language") students. For LD and ED students, problems in academic areas are commonly noted. "Behavior" referrals clearly fall within the ED category. The amount of time that special education services are received is similar across categories at all grade levels, except high school, where ED students receive significantly more direct service time than students in other categories.

After leaving school, special education students and vocational students appear to be more similar than different. Despite several differences on the characteristics of special education, vocational, and college students when they are in school, many post-school outcome measures do not differentiate the vocational and special education students. In fact, several measures generally considered important (e.g., percent in paid employment, hourly earnings) did not differentiate between any of the three groups. Some of these nonsignificant differences, however, appeared to vary as a function of time out of school, most notably for the college group. When differences did emerge between the special education students and the vocational students, they frequently were reflected less in financial integration for former special education students, such as having checking accounts or credit accounts.

When post-school outcomes are compared for different categories of special education students, speech (SP) and learning disabled (LD) students have the most positive outcomes while emotionally disturbed (ED) students have the poorest outcomes. The most striking differences in post-school outcomes always involved the ED category. These students were less likely to be employed, and less likely to be involved in educational activities. These findings are more striking, perhaps, because of the findings related to their greater use of services and resources while in school.

The post-school outcomes that are reported here probably are more positive than might be found if data had been obtained from all potential respondents. This conclusion

is based on the findings from examining certain types of school record information for respondents and nonrespondents. In general, those who responded had performed better than their counterparts who did not respond. The true effect of this response bias is not clear, however, given the tendency for differences among groups to disappear even when their school record data had indicated that they were statistically different at the end of high school. Comparison of the characteristics of respondents and nonrespondents typically are not reported post-school outcome studies.

The full results of the outcomes studied are reported in Project Report No. 3:

Post-school Outcomes for Special Education Students and Other Students One to Eight Years After High School, by R.H. Bruininks, M.L. Thurlow, D.R. Lewis, & N.W. Larson.

Benefit-Cost Analysis Procedure

Background

There is a growing demand for benefit-cost analysis of special education programs. This demand is fueled by a need to identify programs that can make the most of increasingly scarce government funds. It also reflects desires for program accountability as parents, teachers, and students seek to improve the quality of education services.

Despite this growing demand, benefit-cost analysis has been adopted slowly in evaluations of education programs. This hesitancy is due, in part, to confusion about what benefit-cost analysis can and cannot do. Specifically, there appears to be substantial concern that benefit-cost analysis with its focus on dollars and cents will be unable to capture all of the effects of even the primary effects, of programs like special education. Administrators have also been slow to adopt benefit-cost analysis because of a lack of evaluation paradigms that they can use a guides.

Within the Benefit-Cost project, a framework was developed for applying benefit-cost analysis procedures to special education (see Project Report No. 1 by Thornton and Will). The framework outlined the ways that such procedures can be used to facilitate decision making in the area of special education. The developed benefit-cost approach emphasizes several features of benefit-cost analysis that make it particularly appropriate for assessing alternative program options for special education. These include:

- Use of a comprehensive accounting framework that includes all major benefits and costs, regardless of whether they can be explicitly measured or valued.
- Emphasis on benefit-cost analysis as a process rather than a bottom line - the knowledge gained by systematically assessing the available information about a program is generally more important than any single estimate of benefits and costs.
- The use of sensitivity tests to assess the relative importance and implications of the various assumptions and estimates used in the analysis.
- Multiple analytical perspectives that indicate how different groups in society will perceive a specific program and how the program will affect the distribution of social resources.
- A general approach to valuing program effects and incorporating unmeasured effects so that all essential effects can be taken into account when making decisions.

Procedures

Consultants from Mathematica Policy Research met with project personnel on several occasions to discuss the issues involved in analyzing the costs and potential benefits of special education services. The consultants then developed a concept paper outlining a proposed framework and set of procedures for conducting a benefit-cost analysis of special education.

Conclusions

The concept paper presents the analytical process of a benefit-cost study for special education. In doing so, it defines and discusses each of the logical steps comprising this process, presents guidelines for establishing the analytical scope and framework of the

analysis, provides standard procedures for estimating and valuing the full range of outcomes, and recommends how the results should be presented and interpreted.

The paper recommends that in the final presentation, the findings of the benefit-cost analysis should include (1) a benchmark net present value estimate, and (2) a set of alternative estimates based on the sensitivity tests. All of these estimates would then be compared with the available information on the impacts that could not be valued. The findings of the benefit-cost analysis should then be based on all of these estimates.

In the end, benefit-cost analysis must be seen as a process for organizing information. It is not an inflexible rule that can be used to make decisions. Rather, it helps an analyst to sort through a wide variety of data and to aggregate them so that decisions can be made more easily. In particular, it provides a convenient summary measure for those impacts that can be measured and valued in dollars - net present value. It also provides a framework for assessing the potential importance of impacts that could not be valued and the uncertainty surrounding the various impacts that could be valued. The policy maker still must make the decision based on the available evidence and his or her value judgment. However, it is hoped that, by making the systematic comparisons of a benefit-cost analysis, better decisions can be made more easily.

Benefit-Cost Analysis Application

Background

Are the outcomes produced by public school special education worth their costs? Increasingly in the public policy forums and literature the question is being raised as to whether we are "getting our money's worth" from such programs in our public schools. With the increasing application of benefit-cost analysis to other social service programs, the public has come to expect that similar economic analysis somehow can be applied to special education.

Although considerable recent effort has been given to collecting and examining the costs of special education (Decision Resources Corporation, 1985; Hartman, 1981; Kakalik, Furry, Thomas & Carney, 1981; Lewis, Bruininks, Thurlow & Thornton, 1986), beyond employment statistics little other information of a systematic nature has been collected on the economic benefits of such programs. What is needed today is better program outcome information in economic terms and more systematic benefit-cost assessments of special education.

The use and application of benefit-cost analysis to social and educational programs has been a subject of controversy, due in large part to difficulties in assigning dollar values to program effects. Nowhere is this controversy greater than in the field of special education where traditionally most of the benefits have been assumed to be unmeasurable in monetary or economic terms. This project activity attempted to resolve some of these difficulties by examining a specific program area of special education with some preliminary empirical data. In doing this, the project: (a) identified a conceptual framework wherein special education costs and benefits can be described and valued more fully and accurately for analysis purpose, (b) developed a typology linking the costs of special education in a specific area to its perceived benefits, (c) presented empirical data from a large suburban school district case study relative to services for the mentally retarded, and (d) examined a number of alternative benefit-cost assumptions for estimating probable results.

Procedures

A benefit-cost analysis was conducted to assess a specific public school special education program serving mentally retarded students. Drawing from data collected in the larger follow-up study, the authors have been able to identify and value certain costs and benefits from a local suburban school district relating to special education services

for a mentally retarded population. The larger study design and data collection methods were described in the other project activity sections of this report.

One can attempt to assess whether special education is worth its cost in monetary terms in at least two ways. The first is to estimate the average cost of a unit of special education and compare this directly with the earnings that this unit of human capital might generate in the subsequent employment of participants. The second method employs a standard benefit-cost analysis with a comparison group for determining net effects in monetary terms. Both of these techniques were used in a series of analyses that modeled results based on extensive historical and contemporary data.

Conclusions

Preliminary results from this study indicate that the projected lifetime earnings of mildly retarded adults clearly exceeds the costs of providing special education for this population. By employing multivariate earning functions, it was estimated that it costs society approximately $9 in special education services for mildly retarded individuals to generate $1 in annual earnings. The resulting benefit-cost ratio expressed in present values indicated that special education benefits were almost twice as great as their costs.

With appropriately identified, measured and valued costs and benefits, it is possible to employ a formal benefit-cost framework to assess the efficiency of special education services. Such a model provides insight into not only those benefits and costs that can be monetized, but also into many other effects that cannot be valued monetarily. It notes, for example, important other benefits such as work preferences and prospects for increased self-sufficiency, self-esteem and quality of life.

In this study it was estimated that special education for former mildly retarded students was cost-beneficial when compared with a number of alternatives. When historical data were used for hypothetical counterfactual comparison groups, it was possible to examine a number of alternative hypotheses concerning the likely post-school

effects of special education. Various institutionalization, school dropout, and unemployment rates were examined as hypothetical comparisons to special education for a sample of mildly retarded youth. The resulting benefit-cost estimates in these analyses almost universally indicated the economic efficiency of special education for mildly retarded students.

When institutionalization with its attendant and exceedingly high costs was viewed as a possible hypothetical comparison, the resulting benefit-cost analysis clearly favored special education in the schools and deinstitutionalization, even if post-school competitive earnings were zero. It was noted that if special education in the schools prevented at least one out of ten persons with intellectual retardation from becoming institutionalized, special education was cost-beneficial in monetary terms alone. It was also found that if special education for mildly retarded persons was successful in preventing school dropouts there were likely to be significant economic net benefits to society. Finally, when comparing a group of mentally retarded youth provided special education services with an adult group with more limited school-based services from another reported study (Burchard, Hasazi, Gordon, Rosen, Yoe, Toro, Dietzel, Payton, & Simmoneau, 1986), special education was again estimated to be economically beneficial to society. Consistent with the early work by Conley (1973, p. 297), wherein he employed a different methodology, it was found that "educational services provided to the (mentally) retarded can be justified on the basis of earnings along."

Based on the methodology and data in this study, special education for mildly retarded students appears to be "worth its cost," even if all of its post-school effects are measured solely in monetary terms. Activities in this area concluded with discussions of the usefulness and limitations of using benefit-cost methodologies for evaluating special education service programs. The details of the benefit-cost analysis are summarized in two reports:

Benefit-Cost Analysis and Special Education Programs (project Report No. 1), by C. Thornton & J. Will.

Using Benefit-Cost Analysis in Examining the Worth of Special Education: Some Exploratory Hypotheses with Mentally Retarded Population Data (Project Report No. 4), by D.R. Lewis, R.H. Bruininks, M.L. Thurlow, & K. McGrew.

PROJECT PRODUCTS

Four major dissemination vehicles have been used by the Benefit-Cost Project. These reflect the belief that researchers have an obligation to document their activities and findings, and to make this information available to the public. The four major vehicles for dissemination used by the Benefit-Cost Project have included: (a) project reports, (b) project briefs, (c) published articles, and (d) presentations at professional conferences.

Project Reports

Project Reports are detailed papers that present theoretical positions, developmental activities, or the rationale, procedures, results, and implications of research activities. The Benefit-Cost Project has produced four reports:

No. 1 Benefit-Cost Analysis and Special Education Programs, by C. Thornton & J. Will.

No. 2 Cost Analysis for District Level Special Education Planning, Budgeting, and Administrating, by D. R. Lewis, R. H. Bruininks, M. L. Thurlow, & C. Thornton.

No. 3 Post-school Outcomes for Special Education Students and Other Students One to Eight Years After High School, by R. H. Bruininks, M. L. Thurlow, D. R. Lewis, & N. W. Larson.

No. 4 Using Benefit-Cost Analysis in Examining the Worth of Special Education: Some Exploratory Hypotheses with Mentally Retarded Population Data, by D. R. Lewis, R. H. Bruininks, M. L. Thurlow, & K. McGrew.

Project Briefs

Project Briefs are five to ten page summary reports prepared to provide a condensed version of materials presented in greater detail in Project Reports. Four Project Briefs have been prepared by the Benefit-Cost Project. They correspond to the four Project Reports.

Published Articles

Whenever possible, materials from the Benefit-Cost Project will be submitted for more formalized publication. Two articles derived in part from the Benefit-Cost Project already have been published:

Bruininks, R. H., Lakin, C., & Thurlow, M. (1986). Researching the service needs of disabled children and adults. Grants and Awards: Fiscal Year 1985 (pp. 7-11). Minneapolis: College of Education, Office of the Dean.

Johnson, D. R., Bruininks, R. H., & Thurlow, M. L. (1987). Meeting the challenge of transition service planning through improved interagency cooperation. Exceptional Children, 53(6), 522-530.

Other articles are in preparation for submission for publication.

Presentations at Professional Meetings

Benefit-Cost Project activities also have been presented at professional meetings at the local and national levels. Conference papers that have been presented are:

Bruininks, R.H. Assessing the adult adjustment of persons with mental retardation. Paper presented at the 110th annual meeting of the American Association on Mental Deficiency, Denver, 1986.

Thurlow, M. L. Long-term Benefits and Costs of Special Education. Paper presented at the annual meeting of the Council for Exceptional Children, New Orleans, April 1, 1986.

Gilman, C. Implementing Transition Monitoring Procedures at the Local Level. Paper presented at the annual meeting of the Council for Exceptional Children, New Orleans, April 1, 1986.

Bruininks, R. H., Gilman, C., & Thurlow, M. L. Post School Adjustment of Students with Mental Retardation. Paper presented at the annual meeting of the American Association on Mental Deficiency (Region VIII), Bloomington, MN, September 30, 1986.